

growing caterpillar feeds in concealment, remaining between two webbed up leaves or in a scroll-like leaf-fold, the whorls of the scroll securely fastened together by silk.

The full-fed larva is 15 mm. long and dark pink in colour. The head is brown or brownish yellow. The half moon shaped prothoracic shield is dark brown and covers the whole of the dorsal side of the segment. The anal shield is blackish. The thoracic legs are black. There are five pairs of prolegs the claw like crotchets of which are arranged in a complete circle. Warts are present on the somites from each of which two or three short hairs arise. The larval period is about 18 days.

The full-fed caterpillar pupates inside the webbed up shoot or between a webbed up pair of leaves in a loose cocoon of silk. The pupa is 7.5 mm. long, brownish dorsally, greenish ventrally with the wings brownish green. Pupal period is 7 days.

Moth.—vide description by Meyrick in *J.B.N.H.S.* (1906), p. 136.

Economic Status.—The damage caused to young shoots and tender foliage is sometimes serious and the pest may be classed among the major pests of this fruit tree.

EXPLANATION OF PLATE.

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|---------|-----------------------------|------------------------------|
| Fig. 1. | <i>Bombotelia delatrix.</i> | eggs on <i>Eugenia</i> leaf. |
| „ 2. | Do. | egg (highly magnified). |
| „ 3. | Do. | Full grown larva. |
| „ 4. | Do. | Pupa. |
| „ 5. | Do. | Moth. |
| „ 6. | <i>Argyroblote normopa</i> | Moth. |

TRIVANDRUM,
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XX.—A NOTE ON THE EGG-LAYING HABITS OF THE INDIAN GLOW-WORM (*LAMPORPHORUS TENEBROSUS* WLK.)

(With one plate)

Paiva in the *Rec. Ind. Mus.* XVI, 1919, records the luminosity of the few eggs laid by a single female glow-worm. Later on Hutson and Austin in the Ceylon Agricultural Bulletin No. 69, 1924, describe briefly the egg-laying habits of *Lamporphorus*. Their observations were made from 1921 to 1923 on material collected at Peradeniya, Ceylon. According to them the 'oviposition period' lasts from 1 to 3 weeks and is followed by a 'post-oviposition period' during which the female incubates. 'Females which have not had a chance of mating will still lay eggs, but none of the eggs will hatch, merely turning black and drying up.'

The following observations of mine were made during the years 1939 to '42 from material collected at Tambaram, Chingleput District.

Although the larvae at various instars are obtainable throughout the year, the females make their appearance only during the rainy months. They were collected from different localities mostly from inside thorny bushes.

The adult female *Lamprophorus* is exactly like a larva except for its creamy white colour and a few other definite anatomical peculiarities, especially those concerning the antennae and the tarsi. The larvae which have just emerged from a moult also resemble the adult female in colour. But their antennae and tarsi differ fundamentally from the adult coleopteran style.

The female which is normally sluggish during daytime is unusually restless during oviposition. The eggs are laid both during day and night. The eggs when laid are very light yellow in colour, but become darker with time. They are spherical and without any sculpture or ornamentation and vary from 3.00 mm. to 3.50 mm. in diameter. The eggs are faintly luminescent. The luminosity of the egg lasts for several days. Their glow is faintly noticeable even from inside spirit for a few hours. Before oviposition, the female makes a shallow open burrow over which she coils herself in a quiet pose for hours together. So far I have not observed any deep or closed burrow constructed for the purpose. When eggs are being laid occasional convulsions are seen towards the posterior portion of the body. The convulsions sometimes occur at definite intervals. The whole *anal brush*¹ is retracted into the last segment and the posterior most segments are pushed in and out and bulge and relax moving from side to side. During oviposition as far as possible, the same place is sought. Almost all the eggs are laid over the same burrow to form a single heap, over which the mother coils round. If the female is disturbed during oviposition she creeps about restlessly for a long time emitting the brightest glow from her photogenic organ. Sometimes she leaves the burrow and cleans her body busily with her anal brush and again creeps back to the burrow. She is also sometimes noticed to lay eggs singly, slightly outside the burrow and then she carries them by the fore-legs and deposits them over the original heap.

A female (Female A) which emerged from her pupal skin on 25th September 1941, was taken to the laboratory and left in a large glass trough over moist earth. The first eggs were laid on 6th October 1941, the 'preoviposition' period lasting for about 10 days. The last egg was laid on 16th October, the 'oviposition period' lasting for about 11 days, during which time she had laid 57 eggs, all singly varying from 2 to 9 per day. Of these about half the number of eggs were laid during daytime and the rest at night. Of the 6 eggs laid on 10th Oct. morning, 2 were laid outside the original heap, and the 2 eggs laid on 8th night were laid in two separate places. All the remaining eggs were laid in the same heap over the same burrow.

¹ Raj, J. S. 'The Giant Glow-Worm of Tambaram', *Madras Christian College Magazine*, Vol. xi, No. 2, December 1941, page 88.

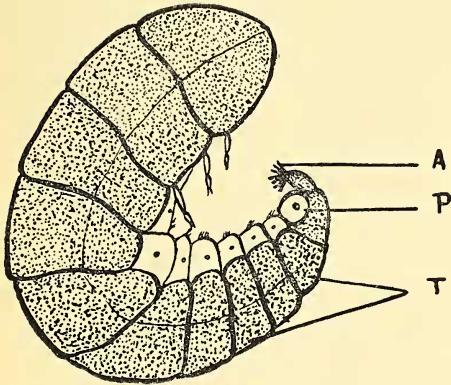


FIG. 1.

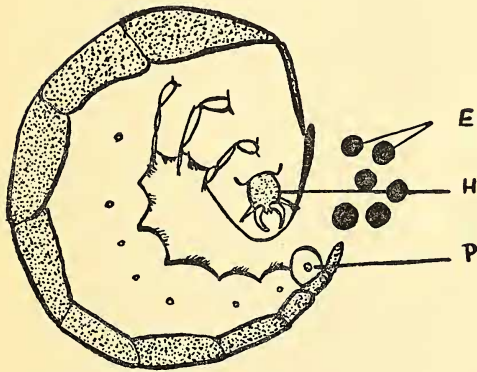


FIG. 2.

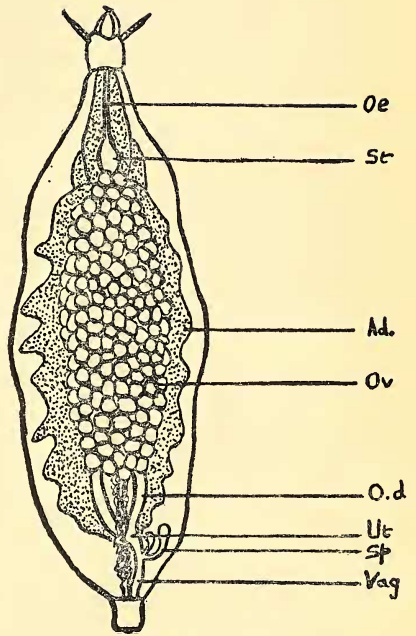


FIG. 3.

J. S. Raj—Indian Glow-Worm (*Lamprophorus tenebrosus* Wlk.)

(For explanation see end of Note).

